

CHARGE NUMBER: 6904
PROGRAM TITLE: BIOLOGICAL METHODS DEVELOPMENT AND UTILIZATION
PERIOD COVERED: SEPTEMBER 1 - 30, 1985
PROJECT LEADER: MIKE PENN
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I. V79 INHIBITION OF METABOLIC COOPERATION (IMC) ASSAY

Previously frozen cell cultures (6-TGs and 6-TGr) were cultured from liquid nitrogen and later evaluated for their response to a solvent and positive control (1). Preliminary results from the IMC assay indicate that the low plating efficiency problem experienced last month was resolved with the subculturing of a lower passage cell line.

Investigations to identify the origin of a fungal contamination were also continued this month (2-3). Several factors were ruled out as being the basis of this contamination. These include the incubators, laminar flow hoods, petri dishes, glassware and trypsin. Even though, preliminary data indicated the medium used in the IMC assay to be contamination free, one contaminated bottle was later found. Because the media was found contaminated, a more intense effort will be taken in the future to evaluate the medium and medium components. However, preliminary results (not yet completely processed) seem to indicate that the fungal contamination has been reduced. No explanation for this change of events can be rationally advanced at this time.

II. THIOBARBITURIC ACID (TBA) TEST

A feasibility study evaluating the TBA test was completed (3). Experimental results from this study seem to show that when V79 cells were exposed to whole smoke (trapped by the smoke bubble), an increase in TBA reactive products was seen over the control. The TBA results from whole smoke showed more consistent trends than did CSC.

The continued use of the TBA test is being evaluated, in view of more recent reports of other assays which purportedly have increased sensitivity and specificity for products of lipid peroxidation.

III. PLANT GROWTH REGULATOR (PGR) DETERMINATIONS

Collaborative investigations, involving plant growth regulators, were continued this month with Charge Number 1904 (4). Experiments to date have evaluated the potential procedures for extracting IAA and ABA from tobacco

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material. As soon as an extraction procedure is operational, the concentrated tobacco material will be assayed for PGR using the Elisa assay developed by IDE-TKE.

REFERENCES

1. Ayers, D. J. 6904 Monthly Progress Report. Monthly Progress Report 85-182; 1985 September 3.
2. Tickle, M. H.; Stagg, D. L. PM Notebook No. 8200 pp. 113-114.
3. Horn, J. L. PM Notebook No. 8229 29-31.
4. Davies, B. D. PM Notebook No. 8005 p. 187.

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